War Has Become a Driver Of Global Environmental Destruction

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Byline: By Sunil S. Amrith

Body

The unrelenting Russian war has poisoned the soil, air and waters of Ukraine. Leaking ruins of chemical factories and exploded debris litter the landscape. Fires have burned across thousands of square miles, visible from space.

In Gaza's ecological catastrophe, toxic dust was unleashed into the air by continued Israeli bombing and raw sewage contaminated coastal waters after the region's treatment plants were damaged or destroyed by the bombardment.

The environmental damage in both war zones fits neatly into a history of militarism over the past 200 years. In pursuit of empire and domination, of territorial conquest or racial and religious supremacy, wars over this period stand as a stubborn driver of planetary harm.

Much of the recent science sees the roots of the climate crisis in transformative technologies and their concurrent phases of capitalism: the plantation, the steam engine, late 20th-century globalization. But there has been surprisingly little said of late about the centrality of war in the narrative of global environmental threats.

When World War I consumed Europe, its industrialized destruction was on such a scale that it seemed only comparison to a natural disaster could capture it. In the letters written home by Indian soldiers on the Western Front, the scale of devastation was conveyed through extended similes. Sowar Sohan Singh wrote home, in July 1915: "There is conflagration all round, and you must imagine it to be like a dry forest in a high wind in the hot weather, with abundance of dry grass and straw. No one can extinguish it but God himself -- man can do nothing." â

By the war's end, the order of metaphor had reversed. In search of an image to describe their theory of how mid-latitude cyclones formed, a team led by the Norwegian meteorologist Vilhelm Bjerknes likened the narrow boundary between contending warm and cold air masses to battle fronts between contending armies. With Europe fresh from trench warfare, the Bjerknes theory of "polar fronts" proved as durable as its central analogy was memorable. The war had unleashed human powers of destruction that exceeded even an earthquake or a cyclone. It made sense, in its aftermath, for powerful atmospheric forces to be seen to resemble human armies.

This was only a prelude to what was to come. The German and Japanese quests for domination in World War II destroyed the homes and lands that had sustained their victims. Fires burned across the frozen waste of Stalingrad, leaving what one German officer described as "an enormous cloud of burning, blinding smoke." Fires fed the crematories of Auschwitz-Birkenau, where a million or more Jews were killed, among the six million murdered in the Holocaust. For the writer Primo Levi, who survived Auschwitz, the faint hope of human freedom amid such inhumanity lay in the natural world. "Today, in this place, our only purpose is to reach the spring," he wrote, describing a day in the camps, when "the sun rose bright and clear for the first time from the horizon of mud."

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In the last phase of World War II, even before atomic bombs defined the final threshold of ruin, the counterattack of Allied forces wielded sufficient force to make a new and unnatural weather phenomenon: the tornado-like firestorm, ignited by incendiary bombs dropped en masse on cities. More than 100,000 people were killed in the firebombings of Dresden, Hamburg and Tokyo.

Scientists have estimated that wartime fires emitted more than half a billion kilograms of soot into the atmosphere in 1944 and 1945 -- enough, in theory, to reduce the solar radiation reaching Earth's surface, though it has not been possible to demonstrate any clear impact on the global climate. Even so, that such colossal impact is even plausible marks the dawn of a planetary power beyond comprehension.

Years after the war, when a Japanese committee of scientists searched for words to describe the atomic bombings, they chose "genocide," "ecocide," "biocide" and "earthocide." In this combination of horrors lies a new way to see World War II as the dark culmination of a more than century-long history of the twinned acceleration of human and environmental destruction.

In the 1960s and '70s, scientists and peace activists came together to argue that militarism now had the power to destroy the very basis of life on Earth. The Yale University plant biologist Arthur Galston adopted the term "ecocide" in 1970, by which time the United States military had spent about nine years raining chemical defoliants upon Indochina's forests in an escalating and failing war. Several million Vietnamese civilians were exposed, and the lasting harm suffered by Vietnamese people -- cancers, diabetes, immunological disorders, children born with lifelong disabilities -- carried across generations. The highly toxic and durable chemical dioxin, a component of the defoliant Agent Orange, pervaded the soil around U.S. storage depots in Bien Hoa and Da Nang. Over the years it would accumulate in the fat of animals and in the fish that formed the bulk of people's diets.

Dr. Galston had made a conscious allusion to the crime of genocide in his charge of ecocide. He demanded whether "any cause can legally or morally justify the deliberate destruction of the environment of one nation by another."

His question haunts us still. A June 2024 report by Israel's Arava Institute for Environmental Studies documents wholesale environmental and humanitarian devastation in Gaza, with bombardments releasing clouds of noxious smoke and toxic dust that may put Gazans at risk for years to come. Starved of fuel and attacked repeatedly, Gaza's wastewater treatment plants had ceased to function and were discharging approximately 100,000 cubic meters of sewage and wastewater into the Mediterranean Sea every day. Satellite images show 80 percent of Gaza's trees were lost by the time the cease-fire took effect.

In Ukraine, burning industrial facilities fill the air with toxic PCBs, dioxins and PAHs, persistent organic pollutants that can accumulate in food chains. The Black Sea Biosphere Reserve, a migratory sanctuary for more than 120,000 birds, is under military occupation. In the June 2023 breach of the Kakhovka dam -- believed to have been blown up by Russia -- hundreds of square kilometers of land and forest downstream were flooded and its reservoir emptied, resulting in environmental consequences so grave that an assessment published by the United Nations Environment Program warned they might only become clear in "years or even decades to come."

Through their disproportionate emissions, these wars affect our planetary future. The first two years of the Russian war on Ukraine have generated an estimated 175 million metric tons of carbon dioxide emissions -- considerably more than Bangladesh, a country of more than 171 million people, produces annually from fuel combustion.

Underlying all of this is a more systemic challenge. The world's military carbon footprint is believed to account for an estimated 5.5 percent of global greenhouse gas emissions, with the United States far in the lead. If they were a country, they would have the world's fourth-largest national carbon footprint. But this is at best an informed estimate, because of the steadfast refusal of major powers, led again by the United States, to include military emissions in setting targets for reduction.

Beyond its material effects, militarism lies at the heart of our planetary crisis for less tangible but profound reasons. It warps the moral and political imagination. It dims our empathy for one another and kills our ability to imagine the interdependence with the other species of life that share this Earth.

The Bengali man of letters Rabindranath Tagore -- a poet, a playwright and the first non-European to receive the Nobel Prize in Literature -- saw this clearly more than a century ago. Tagore viewed World War I not as a sudden convulsion but rather as a slow culmination. The mechanized slaughter of the war, Tagore felt, showed that an imperial world built upon the domination of nature, and on the domination of Asians and Africans, was now collapsing on itself: "Suddenly, all its mechanism going mad, it has begun the dance of the Furies, shattering its own limbs, scattering them into the dust."

Survivors of the Hiroshima and Nagasaki atomic bomb attacks, who formed the group Nihon Hidankyo in 1956 to advocate a world free of nuclear weapons, were finally recognized with the 2024 Nobel Peace Prize. Their brave voices need to be amplified as nuclear conflict looks more likely than it has in generations. We should heed their deep wisdom warning that life on Earth depends on peace.

Following yet another year in which records of extreme heat have been shattered all over the world, we need to excavate a late 20th-century dream that is so distant from our contemporary field of vision as to seem buried -- the pursuit of what was called environmental peace-building. It presented a moral alternative to waging war on nature. The idea behind it was simple: Armed conflict threatens the fragile ecosystems that sustain us all, so repairing our damaged planet may become an active vehicle for peace.

It was utopian then, carrying echoes of older dreams of turning swords into plowshares. It feels still more utopian now. But it received a welcome boost at a United Nations meeting on biodiversity in Cali, Colombia, last fall, where the theme was achieving peace with nature. As the cease-fire in Gaza brings an opening for change, a good start would be to place ecological repair and restoration at the heart of postwar reconstruction.

The only path to a viable future is through a disarmament in our relations not only with one another but also with the rest of the living planet. The alternative unfolds before us, even if we choose to avert our eyes.

Sunil S. Amrith is a history professor at Yale and the author, most recently, of "The Burning Earth."

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